



13401-1002

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What is claimed is:

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1. A coated metal article comprising:

a metal substrate;

overlying the substrate a surface finish comprising a layer of tin or tin alloy being in a  
5 tensile stress state.

2. A coated metal article of claim 1 wherein the layer of tin or tin alloy has an average  
grain size in excess of about 1 micrometer.

3. A coated metal article of claim 1 wherein the average tensile stress is in excess of  
about 2 MPa.

4. The coated metal article of claim 1 further comprising an underlayer of nickel, nickel  
alloy, cobalt, cobalt alloy, iron or iron alloy chosen to generate or maintain tensile stress in the  
layer of tin or tin alloy above the underlayer.

5. The coated metal article of claim 1 wherein the tin or tin alloy layer has a thickness in  
the range 0.5 to 10 micrometers.

6. The coated metal article of claim 4 wherein the underlayer has a thickness in the range  
0-20 micrometers.



7. A method of inspecting or monitoring an article having a coating of tin or tin alloy for tendency to grow tin whiskers comprising the steps of:

determining the internal stress in the coating; and

accepting or rejecting the article based on whether the internal stress comprises tensile

5. stress exceeding a specified value.

8. The method of claim 7 wherein the internal stress is determined by using x-ray diffraction to measure the change in the lattice constant in the coating due to stress.

9. The method of claim 7 wherein articles with coatings having tensile stress in excess of about 2 MPa are accepted.

10. The method of claim 7 wherein articles with coatings having tensile stress in excess of about 3 MPa are accepted.